ELECTRIC REFRIGERATION NEWS

The business newspaper of the electric refrigeration industry

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Advises Sales Departments to Study Public Utility Policies

Central Station Executive Shows How Relations with Public Affect Attitude Toward Refrigeration

By J. F. Owens, Vice-President and General Manager, Oklahoma Gas and Electric Company, Oklahoma City

One of the difficulties in the way of the average manufacturer of electric refrigerators in recognizing the viewpoint of the utility executive is the fact that in a great many instances sales managers of refrigerating concerns have been men, who, in other lines of business, have not been thrown intimately in contact with public utilities. They seem to fail to grasp the idea that the public utility business has, in many instances, peculiarities all its own. First, it comes in contact with practically every man, woman and child in communities which it serves. Its customers are a diversified lot, including, as they do, representatives of all lines of business. Consequently, any new venture into which it enters must be given careful thought and study as to its effect; not only on the general public, but on particular classes of business.

To illustrate, for years the new business departments of central station companies have been striving to secure ice plant loads. Within the last few years many of them have been successful. In sections of the country such as ours, comparatively new and going through the process of development, it is necessary that the central station company, in the point of equipment, be in advance of the needs of the community. Consequently, it must fight for business that will improve its load factor.

In our territory, the ice manufacturing business peculiarly fits into this situation, and recently a great deal of this business has been secured.

This being true, it is incumbent upon us to catch the viewpoint of the ice manufacturer. In most cases we found that the injection of mechanical domestic refrigeration almost brought him to a state of panic. He was alarmed, apprehensive and nervous. He saw possibilities of much of his business slipping away. He was not in a condition to face the situation calmly and to listen to reason. Time alone would bring him to a realization of the fact that he must adjust his business to changing conditions. In the meantime, he resented the thought of the central station company, to which he was paying large monthly sums for service, encroaching on his preserves.

I submit that his reaction to the situation is a perfectly natural one. It behooves the utility company to be cautious, and before complying with the requests of the refrigerating manufacturers actively to push mechanical refrigeration sales, the utility must first set its house in order.

Again, domestic mechanical refrigeration has been in a more or less experimental stage for many years. The central station company must, dealing as it does with every individual in the community and realizing as it does that it must not in any degree shake the confidence of the community in its judgment, be very cautious and conservative in its recommendations. It must, of necessity, go slow in any new undertaking.

The utility company, because of the fact that it is a virtual monopoly and because by reason of that fact it has to overcome in the minds of the public a latent prejudice on the part of the public against being compelled to secure a necessary service from one concern, and one alone, must employ the very highest possible personnel. Its sales force must be not only salesmen, they must be utility men. In the broadest sense of the word, they must understand utility problems; they must have the utility spirit; they should have a thorough knowledge of rate structures and the reasons back of the structures. They are, in a real sense, ambassadors of the utility to the public. They must recognize that a sale is not a sale unless the one to whom it is made is distinctly benefitted by it.

In perfecting a sales organization, it takes time to secure men of this type. Assuming that they are good salesmen in the ordinarily accepted sense of the word, they must be trained in the utility viewpoint and in the peculiar features of the utility business.

My own judgment is that no refrigerator salesman, whether employed by the utility or by a concern not operating through the utility, should be allowed by his house to venture forth until after he has had thorough contact with the utility and its policies. He should be thor-

(*Continued on page 6, column 3*)

Formed condenser coils

No scale. Smooth inside. Formed and fabricated to your order. Write for Prices.

1431 Central Ave., Detroit, Mich.

WOLVERINE

SEAMLESS COPPER AND BRASS TUBING

"M & E" MACHINE IN PRODUCTION

Installations Now Being Made in Philadelphia and Lancaster, Pa.—Wider Distribution Next Year

The Merchant & Evans Co., 2035 Washington Ave., Philadelphia, Pa., manufacturers of fire doors and automotive equipment, are now installing their electric refrigeration machine, the "M & E," in the Philadelphia and Lancaster districts, where installations and servicing can be done under direct factory supervision.

However, greater distribution and increased production is expected to start about January 1, 1928. The sales offices of the Merchant & Evans Company at Chicago, New York, Cleveland and Kansas City will be used as nucleus of the future sales organization.

The M & E machine has a reciprocating type of compressor and the refrigerant used is sulphur dioxide. The compressor is placed on top of the storage tank, which acts as a base. A flooded system is used. A complete line of self-contained units of the household type in metal boxes lined with porcelain and enamel is being planned.

The Merchant & Evans Company has a fire-door factory, located at Wheeling, W. Va., and an automotive parts factory at Lancaster, Pa. The firm has been established for many years and is also well known as jobbers of brass and copper sheet metal. Powell Evans is president of the company and Thomas Evans is secretary and general manager. M. P. Stoney is production manager and in charge of the electric refrigeration department. S. J. Benn is chief refrigeration engineer and sales manager of that department.

COPELAND DISTRICT MANAGERS' CONVENTION

American district sales managers of Copeland Products, Inc., have returned to their various district offices following a convention in Detroit, May 9, when they gathered at Hotel Statler to discuss with company executives the sales plans for the next few months. C. W. Hadden, of the Copeland executive staff, presided at the sessions. He outlined the drama of Copeland's rise within a year from relative obscurity to a condition of prosperity unexcelled in the entire electrical refrigeration industry. Other speakers included George W. Mason, vice-president and general manager, and Albert M. Taylor, advertising manager, who outlined advertising plans for the remainder of 1927.

State Chamber of Commerce Co-operates with Local Manufacturer

A ten-day demonstration of Electro-Kold refrigerators will be held during May at the State Chamber of Commerce headquarters, 703 Third Ave., Seattle, inasmuch as the refrigerators of this concern are a state product being manufactured at Spokane, Wash., and the chamber is assisting in introducing them to the people of the state. "Ted" Lescault will be in charge of the demonstration.

Grier-Sutherland to Distribute Universal Coolers in Detroit

The Grier-Sutherland Company, 433 East Larned Street, has been recently appointed Universal Cooler distributors for the Detroit territory. The company for many years has been engaged in the wholesale merchandising of automotive products in this district. The wholesale store is at the above address and the retail store is located at Woodward and Garfield Aves.

HOWARD E. BLOOD

President of the newly-organized Norge Corporation of Detroit, which is now marketing the Norge electric refrigerator in conjunction with McCray refrigerator cabinets. Mr. Blood is also president of the Detroit Gear and Machine Company.

FORMER SERVEL MEN FORM ZERO-AIRE CORP.

Locate at Chicago—Electric Refrigeration Production For August Delivery

The Zero-Aire Corporation, 510 North Dearborn Street, Chicago, has been formed to manufacture and distribute the Zero-Aire electric refrigeration machine. Production will start in the Chicago factory in time to fill orders on hand for August delivery.

The corporation will manufacture a rotary type of compressor that has been made for the past three or four years in California under the name of Zero-Aire, using sulphur dioxide as a refrigerant. It is planned to manufacture both the household and commercial units from one-fourth h. p. to one and one-half h. p. size.

With the exception of P. G. Jacobson, president of the Reliance Die & Stamping Co., Chicago, all of the officers and departmental executives listed here were formerly connected in an executive capacity with the Servel Corporation. W. M. Tippett, president; vice-president, P. G. Jacobson; secretary-treasurer and sales manager, C. W. Johnson; J. H. Dennedy, chief engineer.

AMERICAN RADIATOR PURCHASES PLANT OF HUMMER ENGINE WORKS

The plant of the Hummer Engine Works at Springfield, Illinois, has been purchased by the American Radiator Company and has been equipped by the industrial division for the manufacture of American domestic units and commercial refrigerating sections. In addition to these parts, the American Radiator Company will also manufacture special castings for electric refrigeration units and cabinets.

The Detroit Lubricator Company will continue to manufacture American automatic expansion valves, American float valves and Mercoid controls.

Notice

On May 20, Electric Refrigeration News will move to larger offices in the new Maccabees Building located on Woodward Avenue at Putnam Street, Detroit.

More than double the present office space will be available. This will permit the much needed expansion in the staff and service facilities of the paper.

The new building, erected by the Maccabees fraternity, faces the Detroit Art Center and is one of the most beautiful structures in the city. It is most conveniently located about half-way between the down town and General Motors districts.

Subscribers, advertisers and friends are invited to visit the new home of Electric Refrigeration News on the fifth floor any time after May 20.

All high grade refrigerators are Monel Metal trimmed

Monel metal

THE INTERNATIONAL NICKEL COMPANY (Inc.), 67 WALL STREET, NEW YORK CITY

Ice Industries Begin $200,000 Advertising Campaign to Women

Aim to Sell Non-Users and Those Who Cannot Afford to Buy Mechanical Refrigerators

During the past year leaders in the ice industry have been endeavoring to develop an active interest in a national co-operative advertising campaign designed to bring about a better understanding of the need for protection of food in the home through the proper and regular use of ice.

In order that the electric refrigeration industry may be informed regarding the purpose and significance of this movement as written from an entirely neutral viewpoint, the following article is being reprinted in full from *Printers' Ink:*

Spurred on by the increasing advertising activities of companies making mechanical refrigerators, the ice industries of the country have begun to tell their side of the story in national advertising. They have a strong case to present and a tremendous amount of adverse propaganda to check, the icemen believe. This year they propose to spend $200,000 in advertising directed, for the most part, to women.

Five years ago the ice industries, through their association, began a campaign which they now admit to have been sadly inadequate. A few far-sighted icemen were ready for it, but the great majority never believed in it or knew what it was designed to do.

There is reputable authority for saying that during 1927 not less than $10,000,0000 will be spent in advertising by manufacturers of mechanical refrigeration units as opposed to $200,000 on the part of the icemen. However, the selling price of the ice machine is still so high, the ice people say, that its market will be restricted. The ice industries are going to devote their dollars and advertising space principally toward expanding sales in the other direction. Investigations have proved that millions of people do not take ice until the real heat of summer sets in. Some authorities think that as much as 40 per cent of the market never buys ice at any time.

Thus the major aims of the campaign, which has already started, are:

1. To create respect and confidence for the ice industry by giving facts about its size, importance, facilities, growth, capitalization and tonnage so that the investing and financial public may have no ground for feeling that the industry is in an unstable condition.
2. To build up a new stratum of ice business, a broader domestic market.
3. To increase ice consumption by present customers, extending the ice-using season and suggesting further uses of ice.
4. To suggest the need of a good ice box for efficient refrigeration and proper use of it.
5. To promote ice as a refrigerant in competition with the small ice machine.
6. To undertake scientific and practical research to show the value of ice as a refrigerant and how to use it.

The National Association of Ice Industries will use full-page and half-page space this year in one national weekly and six women's magazines. Besides this it will supply copy and mats to members for local newspaper use and direct-mail material, in addition to pushing the sale locally of a low-price ice box manufactured to association specifications and tested by it. What the national campaign accomplishes this year, association officers are frank in telling the rank and file of their membership, depends very largely on the way local companies capitalize on it. So far the copy appearing nationally is entirely educational in character. The real job of selling is left to the individual ice company.

A good many icemen take the view that the manufacturers of ice machines have indulged in too many slurs at ice in their advertising. Accordingly, they would like to see ice advertised in a way that would make any consumer stop and think twice before buying a machine. They believe, for example, that the ice machine has not yet reached the point where it is fool proof, and that it has an operating cost that makes it more expensive than the old-fashioned ice box. So far the association has avoided anything like recrimination or mud-slinging in the advertising which it has prepared.

"Ice machine propaganda has been reaching practically all ice customers and prospects through magazine and newspaper channels," said one of the officers of the ice industries association to *Printers' Ink*. "It is far more dangerous to ice, I believe, than the machine itself. Our present campaign will deal with this in two ways. It will sell ice, as such, its costs and its effectiveness as a refrigerant. Then the campaign will go, for the first time, after the immense layer of people who cannot afford the luxury of an ice machine and who do not represent the primary market for one. In this group there are millions of families earning between $2,000 and $5,000 a year. There is another smaller group earning from $1,000 to $2,000 a year. Many of them buy no ice at all, and most of those who do buy are summer users only.

"Promoting ice as a refrigerating service in competition with the home machine will be done so as not to invite criticism. It

(*Continued on Page 8, Col. 2*)

SERVEL ELECTS SMITH PRESIDENT

Sell Wheeler Condenser Holdings But Retain Newburg Plant Two Years

At the annual organization meeting of the board of directors of the Servel Corporation held recently, an executive committee consisting of H. G. Scott, Richard E. Forest and Frank E. Smith was formed. Frank E. Smith was elected a director in place of Thomas H. Blodgett, who has resigned, and was also elected president of the company. The other directors were re-elected.

The holdings of the common stock of the Wheeler Condenser & Engineering Company have been sold for cash by the Servel Corporation, but the latter will retain the use of the Wheeler plant at Newburgh, N. Y., for a period of two years.

DAVID A. BROWN AWARDED GOTTHEIL MEDAL FOR 1926

Absopure President Honored by Zeta Beta Tau Fraternity for Jewish Relief Work

David A. Brown, president of General Necessities Corporation, Detroit, Mich., manufacturers of the Absopure Frigerator, the man who invented the slogan, "Tired of giving! You don't know what it is to be tired," in connection with the Jewish charities campaign, has been selected by a committee of 11 prominent editors to receive the Gottheil medal for 1926. This medal is awarded annually by the Zeta Beta Tau fraternity to that American, whether Jew or Gentile, who shall have been conceded to have rendered the greatest service to the cause of Judaism in the year of the award. Brown has come into national prominence in the past few years through his activities in behalf of poverty-stricken Jews in the Near East and of Jews generally.

FRIGIDAIRE ARE HOSTS TO DAYTON REALTORS

Dayton architects, members of the Dayton Real Estate Board and the Dayton Builders' Exchange, were guests of the Delco-Light-Frigidaire Company at a banquet at plant No. 2 April 25. There were 800 guests present.

Charles I. Beaver, president of the Dayton Real Estate Board, was toastmaster. H. R. Blagg, president of the Builders' Exchange; H. I. Williams, of Schenck and Williams, architects; William R. Keyes, of the Moraine Development Company, and H. R. Prior, general sales manager of the Delco-Light Company and Frigidaire Corporation, were speakers at the banquet in the factory cafeteria.

After the dinner the party went on an inspection trip through the Frigidaire plant. The commercial Frigidaire exhibit erected for the recent sales convention was of special interest to the members.

Will Sell General Electric Unit in Wisconsin

E. H. Merritt, formerly refrigeration manager of the Ed Schuster Company, Milwaukee, distributors for Servel, is now sales manager for the Electric Refrigerator Company, a new organization formed in Wisconsin to distribute the General Electric unit. An attractive show room has been opened at 131 Third St., Milwaukee.

HOW TO GET RID OF THE OLD BOX

Practical Plan Avoids Trade-In, Pleases Customer and Advertises New Installation

By Leslie A. Coons
F. E. Davenny Maytag Co.,
Ashtabula, Ohio

A. T. Southand's letter regarding "trade-ins" will no doubt get a number of replies, as his question is timely and I have found the problem to be sales resistance in about fifty per cent of our prospects. However, in this city of twenty-six thousand we have found an excellent method of overcoming it and I am glad to submit the plan to our fraternity.

As he says, in the customer's mind these boxes, into which they are unwilling to install electric refrigeration, always exist as "perfectly good," "almost new," and "expensive." We first bring them down to a sense of true values by showing them how cheaply we can buy a new box of the same class. Since manufacturers' discounts on refrigerators of this type run from fifty to seventy per cent off list prices, and we may subtract an allowable depreciation from this figure, friend Customer sees that in order to sell his box at about half his original estimate of its value he must seek a market not so well informed as ourselves. So we suggest that he put it out in the front yard with a sign on it.

"ICE BOX FOR SALE—
SERVEL INSTALLED HERE"

The beautiful thing about the above plan is that it works. The display is seldom continued for more than a week. Passersby inquire and the bargain is quickly made. In the meantime our equipment is already in and we all know it will never come out.

This is a "home" town and the people are not above such practice. My infancy in this business was spent in Cleveland, and the above was never tried out there, so I will be interested in knowing what results can be obtained from it in larger cities. It seems to me, though, that the sad case of the automobile dealer should be sufficient incentive to us not to establish the "trade-in" precedent.

TEST MACHINES BEFORE MAKING DELIVERY

Service Man Should Carefully Explain Oiling, Defrosting and Proper Placement of Food

By J. J. Brennan, Commercial Manager,
Memphis Power & Light Co.,
Memphis, Tenn.

Far too often the gulf between the sales and the service department is too great, and in order to function properly there must be a complete understanding of what an electric refrigerator will and can do. We have often heard the statement made that it takes a salesman to sell a mechanical device, but it takes a good service man to keep it sold, and this is certainly true.

Frequently salesmen in their enthusiasm to close a sale make statements which seem ridiculous to one with a complete understanding of the problems involved, and when a service man is expected to accomplish an impossibility a customer is dissatisfied and either returns the refrigerator or it is necessary for some higher authority in the department to go out and resell the job, correcting what misunderstandings have arisen.

We believe that in order to obtain best results regular meetings should be held, attended by both sales and service men, and that a serious study be made of mechanical refrigeration and the solution of its problems and actual cases cited and discussed. This not only eliminates dissatisfied users, but also friction between the utility's two important departments.

In making installations, if machines are set up in the company's warehouse and thoroughly tested before being delivered, a great deal of time and money can be saved the dealer, as well as annoyance to the customer, and the few calls by the service man following the installation to make final adjustments tend to tie in the company even stronger in a more direct and personal way, and if the service man will carefully explain oiling, defrosting, etc., suggesting proper placement of food for best results, he can save himself a great many calls.

In the past a large percentage of calls were made where a real service problem did not exist, and if the salesman had not over-stated and the service man had given the customer a thorough explanation of her refrigerator and how to accomplish best results, many a trip could have been saved.

Until all friction and misunderstanding between the sales and the service department is corrected, the service department is going to be on the wrong side of the ledger.

A good service man must be a real mechanic, a diplomat, and have the necessary vision that will sooner or later land him in a position of great responsibility.

"SECRECY HAS GONE OUT OF STYLE"

"There are still many companies which will not share their experience with others, especially competitors. By and large, they are taking a shortsighted view of matters. A competitor is never so dangerous as when he is incompetent, and especially when he does not know the facts of his company, his line of business, and business conditions generally.

"The company which accepts the salesman's alibis for not bringing in the orders—especially the statement that competitors are cutting prices when they are not—or which cuts prices because it does not know through its trade association that it is getting its share of a depressed market, is a menace to the trade.

"Secrecy about management methods has gone out of style, and unwillingness to discuss methods with others is mostly due today to lack of confidence that the right thing has been done or to lack of time to prepare adequately a satisfactory presentation. Executives who are sure of their accomplishments are extraordinarily willing to talk about their achievements."

—From *"Management Research Methods and Qualifications,"* by W. J. Donald, Harvard Business Review, January, 1927.

COPELAND REPORTS NET PROFIT IN FIRST QUARTER

Rapid Growth Credited to Reorganized Executive Staff

"General acceptance of electrical refrigeration by the general public in the past two years is one of the outstanding facts of the decade," said William Robert Wilson, president of the Copeland Products, Inc., Detroit, in making a statement regarding the growth of the company.

"Indicative of the favor in which the industry is held by the public are the facts pertaining to the expansion and development of our company which since early in 1926 has been little short of phenomenal. In some ways the record is unique.

"The first quarter of 1927 was better than the company's budget foretold, and its operations showed a net profit. Our business, during this period, was 204% greater than for the first three months of 1926. Judging from orders on hand and reports from the field, we expect that the second quarter of this year will produce business 250% greater than that of the first three months of the year.

"On January 1, 1927, our company had three and a half times as many outlets throughout the country as on January 1, 1926. Since January 1 of this year new distributors and dealers have been added to the list at a more rapid rate, and at this particular time new outlets are being established at the rate of approximately fifty a week.

"The more remarkable growth of Copeland Products, Inc., dates back to the reorganization of the personnel which was effected in March, 1926. At that time, George W. Mason, formerly works manager for Chrysler, came to us as vice-president and general manager. W. D. McElhinny, formerly commercial sales manager for Frigidaire, and for years recognized as an authority in electric refrigeration, was appointed our vice-president in charge of sales. C. W. Hadden, general sales manager of the Velie Motor Company, came to us as one of the executive staff.

"Under the direction of these officers immediate and far-reaching changes were made effective. An aggressive sales force has been built which covers the country, and this is being strengthened and enlarged to such an extent that we are justified in looking for greater increases in the future than in the past.

"Electric refrigeration is in its infancy. It is destined to become as well known a household and commercial factor as electric lights, gas ranges and electric fans. Modern science has revealed the fact that proper care of food is of vital importance in maintaining health. Culinary experts have added as many new dishes through the use of refrigeration as they have through the application of heat by means of gas and electricity.

"Another noteworthy fact is that many men, not only of our own organization, but of other electric refrigeration companies, have been recruited from the automotive field and have come into it through their belief in the great possibilities of the industry."

Laube Electric to Sell Lamson Machine

Laube Electric Corporation, Rochester, N. Y., will distribute the Lamson Ice Maid. G. Fred Laube, president, is a pioneer in the refrigeration field. His successful Electrical Department Store is unique in the industry.

SALINA, KANSAS, DEALER CULTIVATES RURAL MARKET

The Frigidaire and Delco Light Company, of Salina, Kansas, reports an increasing demand for electric refrigerators in its territory, which includes Salina and surrounding rural territory. C. J. Stevens is manager. Four trained salesmen are employed.

"We are selling eight machines a week," explained a salesman. "We seek customers in rural territory as well as in town Salina has about 18,000 population, and is surrounded by fertile farms, which are operated by a progressive type of people. The main essential is to give prospects an opportunity to acquire concrete evidence of the comforts, economies and all-around convenience of electric refrigeration.

"We advertise our line of electric refrigerators in local newspapers. Display, demonstration and canvassing are sales aids which enable us to locate desirable prospects and turn them into customers. The electric refrigerator appeals to the busy housewife—we emphasize its advantages and make the sale. We seek customers among practical people who are interested in new and better methods. We find it pays to work our territory systematically, and give prospects the opportunity to acquire first-hand evidence of the merits of electric refrigeration.

"Rural territory is a fertile field for this type of equipment. Salina is located in the great wheat belt—crop prospects are very encouraging. We find the country housewife is a keen judge of modern household equipment, and she soon determines that the modern electric refrigerator is a worth while investment."

Ever Improving

"I wish to compliment you on your ever-improving ELECTRIC REFRIGERATION NEWS." —John C. O'Brien, president The Jack Frost Ice Machine Co., Toronto, Canada.

The Gold is *Still There*

GOLD loomed on the horizon of thousands of distributors in the earlier days of Electric Refrigeration. Money to be made . . . a new Industry . . . get in at the bottom and grow with it.

The gold is still there, surer than ever for the man who makes a legitimate profit on the sale of Electric Refrigeration systems *and doesn't have to watch the gold trickle away between his fingers in the form of service, service — and more service.*

To attain practical reliability and reduce service requirements, refrigeration engineers have for years been seeking an electric refrigeration system which would combine the advantages both of Low Pressure and Slow Speed Operation with simplified mechanism.

Welsbach announces the achievement of this goal. Welsbach Electric Refrigeration functions at less than 20 pounds pressure with a speed of only 280 R.P.M.

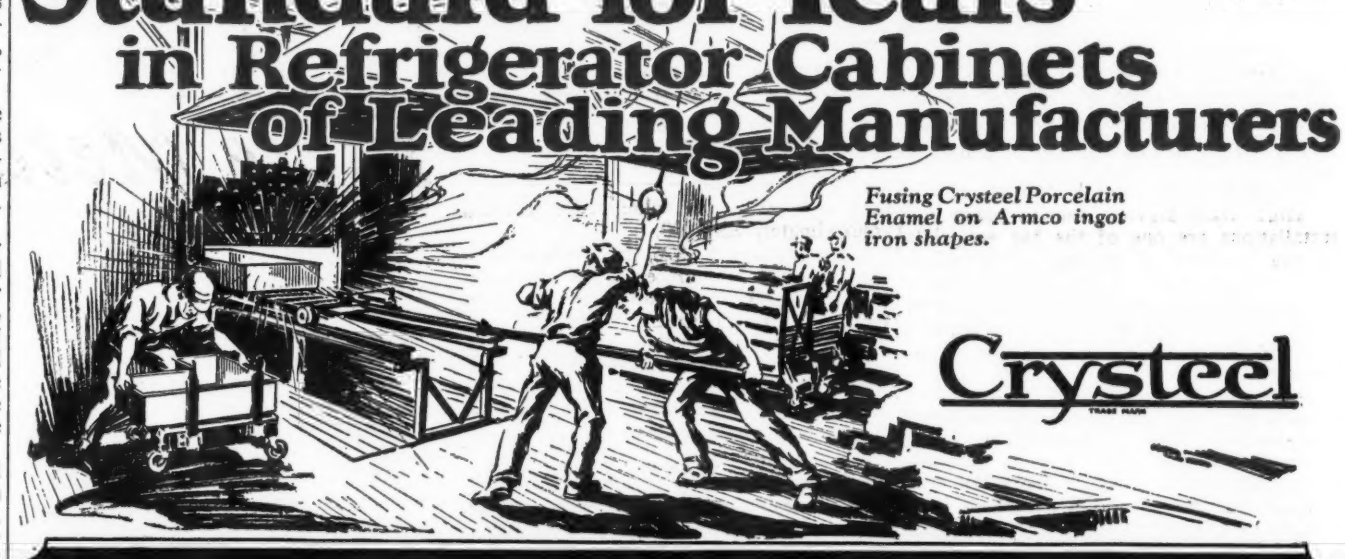
This is the most important announcement made by the industry in years.

The Welsbach record of 40 years' leadership in service to home owners is a guarantee of the value of a Welsbach selling franchise. Central Stations should write to Public Utilities Division, Distributors and Dealers write to Distributor and Dealer Division of Welsbach. Welsbach Company, 307 Ellis St., Gloucester City, N. J. Adjacent to Philadelphia, Pa.

Welsbach Cabinets and equipment—from foundry to finished product—made in the same plant.

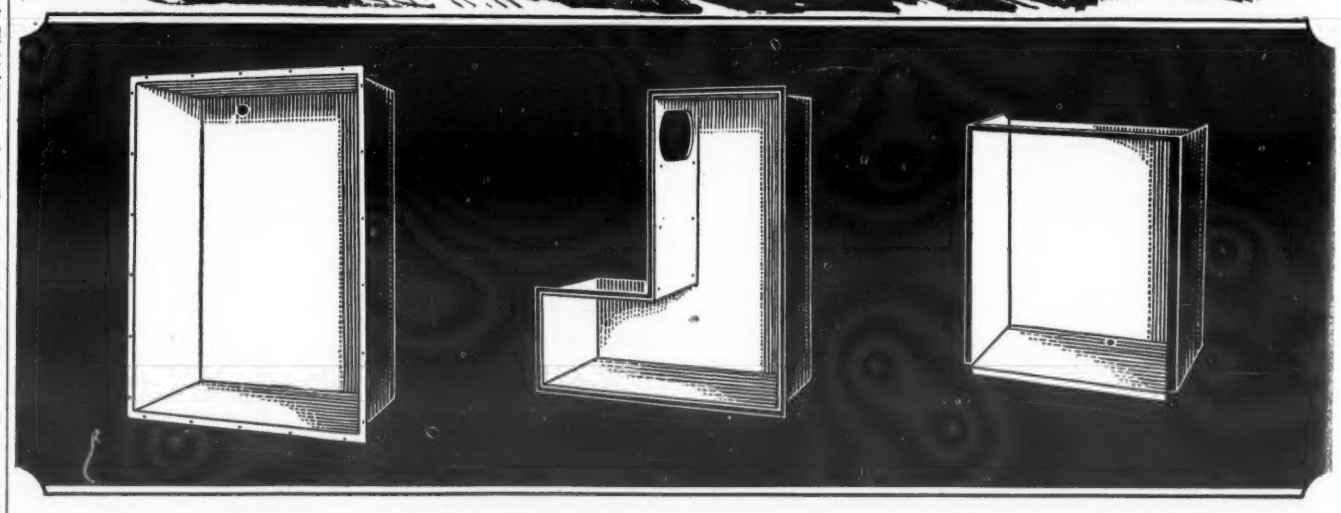
LOW PRESSURE
Electric Refrigeration
by
Welsbach

Standard for Years in Refrigerator Cabinets of Leading Manufacturers



Fusing Crysteel Porcelain Enamel on Armco ingot iron shapes.

Crysteel



Benjamin Refrigerator Linings

The Crysteel Works of the Benjamin Electric Mfg. Co., offers to manufacturers of refrigerators an unsurpassed service which includes:

1 Years of experience in the correct FABRICATION of porcelain enameled parts and particularly in the production of seamless, one-piece, refrigerator linings.

2 Linings, the QUALITY of which is unquestioned and with a FINISH acceptable to the most discriminating buyer of high class merchandise.

3 ALIGNMENT of linings so precise that when linings are properly assembled to frame breakage is reduced to a minimum.

4 Long experience in PACKING porcelain enameled shapes insures safe arrival at refrigerator manufacturer's plant.

5 Railroad facilities permit loading directly on cars, without trucking.

Correspondence is invited regarding our facilities for handling production of any magnitude

Crysteel Works
of BENJAMIN ELECTRIC MFG. CO.
120-128 S. Sangamon St.,
CHICAGO

THE THERMOMETER ON THIS DOORWAY SOMETIMES REACHES 120 DEGREES

Phoenix, Arizona, branch of the Delco Light Company, distributors of Frigidaire.

Refrigeration Today Is More Than Merely Getting the Frost on the Coils

High Class Service Men to Make Installations Essential in Selling Refrigeration

By Roy George

"Special selling costs a lot of money. We've got to show results," says C. W. Hobson, sales manager for Delco-Light Co., Phoenix, Arizona. He had just finished a school session. The sales room was swarming with salesmen, new and old. The manager was in a mood for sizing them up and for facing the facts.

"The salesman who can go out and meet the ice man in the home, meet him where he has always been supreme, can make things stick. We train some who can't do that. We have to let them go, and it brings up the average of the cost of well-trained salesmanship.

Estimating and Installing

"High class service men to make the installations are one of the big essentials in the business of selling refrigeration. You can't guess at this thing; it's an engineering question, and it has to be answered right. When figuring on an equipment, we've got to know that we're figuring on the right equipment.

"Look at the simple matter of cooling coils, alone! A shape and a size for every container, and a construction to meet every demand; but we've got to know precisely what the need is. A mistake there is a mistake that lasts on into years; right service at the first establishes not only a business but a continuous method, a habit.

"We're still selling the idea. We're still selling refrigeration. And when you get the idea of refrigeration sold, refrigerators sell themselves. All the salesman then does is take the order."

Growth in a Warm Country

The Delco Light Company has just announced an expansion program, making Phoenix the distributing point for practically the entire state. Fourteen offices operate under the management centered here, with an annual volume now reaching approximately $300,000.

Since January 1, 1926, the Phoenix office has increased the number of its employees from 5 to 20. The Salt River valley is recognized as the natural point of distribution for a large section of the southwest territory, and the force under Mr. Hobson covers the ground down to the El Paso field. Service departments are operated at 20 points in the state of Arizona.

Advertising Program

"Arizona offers us a wonderful field, both from climatic conditions and from business activity," says Mr. Hobson. "We are going after business stronger than ever this year, and will give the Delco products all the publicity consistent with an advertising campaign amounting to $3,777,000, adopted for 1927 by the Delco Company, two and a fourth per cent of our gross business being expended within the state for advertising, largely in newspaper space."

The Phoenix warehouse stock of the company amounts to well upwards of $100,000.

"The reorganization by which Frigidaire products are handled separately from the Delco products, while handled by the same agencies, is a move in the right direction, making, as it does, for a far greater flexibility in sales and credits.

"The tremendous growth of the business has made it imperative that it be handled as a separate organization. We now have a plant that surprises us all, every time we get back. If it's not the biggest plant under one roof, then plants have grown bigger since I was a boy. We occupy 65 acres now, and I could have sworn it was as big as my father's old 130-acre farm when I saw them both last month.

Making It Work

"The change in the matter of credits that is being talked about everywhere is of only secondary consequence to me. We are selling the biggest idea in our time, bar none. The conservation of food products and the preservation of health is a matter not of millions, but of hundreds of millions, of untold wealth, in fact.

"My business is to see to it that every unit we put out does the work demanded of it and does it economically. This is especially true of the home installations. Commercial jobs will somehow work out their own salvation. There are a hundred checks on the commercial job in operation where there is one in the home.

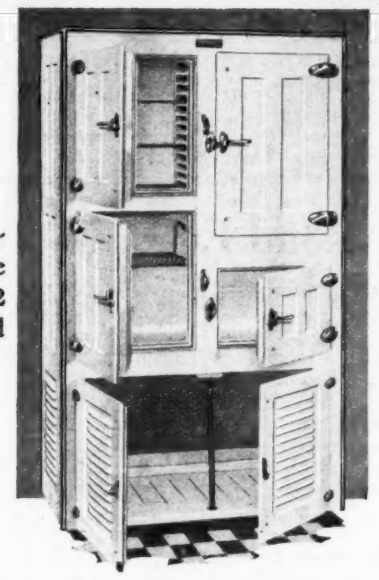
"And my business is to make that check in the home a complete check, and no comeback whatever. I consider that my duty to the company and to myself demands that I check every job thoroughly because we are going through the stage now that builds the future business."

Would Not Be Without It

"I wish to congratulate you on the good work you are accomplishing through the medium of ELECTRIC REFRIGERATION NEWS. I enjoy reading it very much and would not be without it. I only wish it were published more often."—L. C. Dunbar, Globe Electric Supply Company, Denver, Colorado.

BOHN SYPHON REFRIGERATORS

Beautiful, Distinctive. Can be had in 7, 9 and 12 cubic foot net food storage capacity.



White Porcelain Enamel inside and outside. The machine compartment is ideal for storage space where remote installation is made.

For Electric Refrigeration

Write for Full Particulars

Bohn Refrigerator Company

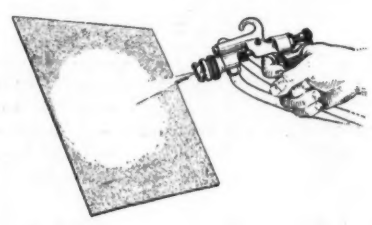
SAINT PAUL, MINNESOTA

These Models are on Display at our own Stores in

NEW YORK 5 E. 46th St. | CHICAGO 227 No. Michigan Blvd. | BOSTON 707-709 Boylston St.

More and more of the Industry's Leaders *are Standardizing on these Metal Sheets for Cabinets*

The rust resisting coating will not break or peel



Both sheets take and retain the finest lacquer and enamel finishes

1-Super-Metal
2-Galvannealed

TWO things in a metal refrigerator cabinet are essential—(1) it must resist rust in every corner and square inch of surface—(2) it must take and retain a smooth and perfect lacquer or enamel finish. Having found these qualities in Super-Metal and Superior Galvannealed, a constantly increasing number of manufacturers have solved their cabinet problem.

Super-Metal is made from a special analysis, copper content metal, coated with a special mixture of alloys. Superior Galvannealed can be furnished in open hearth or copper content steel coated with prime spelter and alloys of other metals. These coatings thoroughly amalgamate with their base. They are not only highly rust resisting, but will also withstand the most severe forming operations without the slightest fracture or peeling of the coat.

Offers 2 Grades of Choice

The surfaces take and retain any type of lacquer or enamel finish, Super-Metal being particularly recommended for its "Polished" finish. While slightly lower priced, Superior Galvannealed has met the requirements of a number of the best known manufacturers of refrigerating units and metal cabinets.

Samples and complete information will gladly be sent on inquiry.

Clip this coupon to your letterhead and mail

The Superior Sheet Steel Co.
Canton, Ohio
Kindly send samples and data on your special sheets for refrigeration cabinets.
Name .....
Address .....

The Superior Sheet Steel Company
CANTON, OHIO

Makers of Lead-sealed Sheets, also Galvanized and Long-Terne Sheets

Super-Metal (Superior) Galvannealed
For the Finest Cabinets — Second only to Super-Metal

One Standard, the *Highest*

IN engineering, materials, and craftsmanship every McCray refrigerator is built to one unyielding standard of quality. For more than a third of a century McCray has been building to this standard. Our service record for this period is the strongest guarantee of satisfaction. All models ready for any type of electrical refrigeration.

Correspondence invited from interested dealers.

McCray Refrigerator Sales Corporation
DEPT. 66, KENDALLVILLE, IND.
Salesrooms in All Principal Cities — See Telephone Directory

McCRAY REFRIGERATORS

ELECTRIC REFRIGERATION NEWS

The Business Newspaper of the Electric Refrigeration Industry

PUBLISHED EVERY TWO WEEKS BY

BUSINESS NEWS PUBLISHING CO.

409 East Jefferson Avenue, Detroit, Michigan
Telephone: Cadillac 4445

Subscription price: $1.00 per year; three years for $2.00
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F. M. COCKRELL, *Editor and Publisher* H. A. DELASHMUTT, *Advertising Manager*
F. B. RILEY, *Technical Editor* C. M. SELPH, JR., *Circulation Manager*

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MAY 11, 1927

"I Read Every Word"

It is a pleasure to get out a paper for a group so wide awake as the electric refrigeration industry. The job is made more enjoyable by letters from subscribers and advertisers in which the service of the paper is commended in terms of real enthusiasm. Among the statements used to express interest and appreciation there is a noticeable tendency toward such as "I read every word," "Every line is interesting and helpful," "I do not want to miss a single issue."

Comments on specific articles, requests for information suggested by articles published, replies to box advertisements, even corrections of typographical errors, provide added assurance that the columns are being read intently and to a purpose.

No Room for Puffs

Value of editorial material must, of course, be given major credit for such interest on the part of men engaged in so active a business as that of making and marketing electric refrigerators. The small size of the paper has proved to be an effective agent in forcing the continual improvement in quality. There is no room for meaningless "write-ups," "puffs" or "filler."

The highly specialized field of the paper is undoubtedly another reason for the high degree of satisfaction evidenced by readers. Those who have cast their lot with electric refrigeration—invested money, time and effort in it—are definitely and decidedly interested in everything pertaining to the subject. In ELECTRIC REFRIGERATION NEWS they find "nothing else but." Readers find no occasion for selecting, culling or skimming over the paper to find that which concerns them. That job has already been done by the paper.

Size Appeals to Readers

We believe the form of the NEWS is also an important factor in its popularity. In selecting this size we profited by the experience of certain highly successful, though sensational, dailies. There seems to be something psychologically right about a five-column newspaper. It does not appear formidable—it looks easy to read. In this respect it is possible that the reader is pleasantly deceived regarding the volume of the printed matter. If the bi-weekly issues of this paper were put in the form of a monthly, pocket-size magazine it would require approximately 100 pages to present the same amount of material.

ELECTRIC REFRIGERATION NEWS was launched with a clean-cut aim to render a needed service. It has been operated on a basis of "sow" before trying to "reap." It is gratifying to know that such a policy will, in due time, bring its reward. The present indications are that it will soon be necessary to increase the number of pages, or the frequency of issue, in order to keep pace with service requirements.

AN ATTRACTIVE POSTER

Will the Iceman Make a Good Advertising Salesman?

That Mysterious Individual, Mr. Ultimate Consumer, Talks About the Ice Industry's Advertising

By Amos Bradbury
Reprinted from Printers' Ink

It seems strange, sometimes even to me, that a person like myself, sitting quietly on a sunny porch in a suburban house, should have the temerity to write on merchandising and advertising subjects and direct my message to experts on these topics. The only merchandising with which I come in close contact these days is an occasional auction when, in the back country near me, the heirs of some farmer put up for quick sale everything from an old sleigh to such a jewel of a ship lantern as I picked up this week.

And yet, as I have pointed out in previous articles in *Printers' Ink*, the man who sits quietly at home may find many advertising and sales suggestions right in his own house and in the habits and customs of the people who call there trying to sell merchandise.

He may also, if he observes carefully, discover how things should not be done. So, this time I take pen in hand to discuss a phase of back-door advertising which has just come to my attention. In this case, it was the local iceman who gave me this suggestion, which I am passing on.

How the Iceman Advertises

Our local iceman is a delightful fellow, and at chopping ice with neatness and skill to fit our box there is no iceman I have seen who is his equal. But as a salesman and advertising man, representing the great industry of which he is a part, I fear he is not so good.

This is what happened:

"Are you still buying ice from us?" he asked me somewhat gruffly one morning.

"I think we are," I replied, "and just did, if the chopping noise I heard a moment ago wasn't a woodpecker in the dead tree."

"You ain't never thought of putting in one of them electric ice-boxes, have you?"

I admitted that the intriguing advertising of one or two of the big companies had, as a matter of fact, interested me somewhat.

"Don't do it," said the iceman in a deep and solemn voice. Then, before I could escape, he thrust into my hand a booklet which he had apparently kept concealed up to that moment, and before I could thank him or ask him what it was all about, he had turned and stalked away.

The booklet which my iceman gave me lies before me as I write. It seems to me important. It impresses me as a brilliant example of what an industry faced by new and aggressive competition should *not* do to meet that new competition. But, lest any of my readers may think I am merely a destructive critic, I am going to suggest, before I finish, what, in my opinion as a householder, the ice industry of America should do, instead of using this back-door method of advertising.

They have just started to do it in print. Can they make my iceman a better salesman?

The booklet, which is anonymous and most aggressive, bears the title: "Ask Him." The first page tells me that to be forewarned is to be forearmed, and says that mechanical-chemical substitutes for ice "masquerading under the alluring but misleading title, '*Electric* Refrigeration,' are for the moment being extensively and expensively advertised in the daily papers, in magazines, by mail or by persuasive salesmen either at your door or in attractive shops. The obvious purpose of this nation-wide publicity campaign is to make the public forget, if possible, the safety, economy, reliability and other time-tested, time-proved qualities of ice."

Another Questionnaire

The booklet instructs me to ask the electric refrigerator salesman a series of questions. The questions with which I am to bowl him over are rather derogatory of him and his product. I must ask him this one first:

"Why is it, if these devices (there are scores of them, each claiming virtues all its own, and freedom from the faults of others) are the 'wonder-workers of the day' that such an enormous and continuous amount of advertising is found necessary to promote their sale? The money now being expended for exploiting these mechanical-chemical devices is practically without parallel in the history of advertising. Long ago it was said: 'A good wine needs no bush'—pointing out that those who sold wine of real merit required no bush or vine hung outside their shops to attest to its origin."

"Ice is Advertised by Its Loyal Friends."

As a loyal friend of ice, I will suggest additional copy for my favorite product later on. But the refrigeration man is waiting and I must hurry to ask him a couple of more questions: " . . . whether, when he uses the term 'Electric Refrigeration,' he means that electricity directly produces ice or cold air? If his reply be 'Yes,' he states what is absolutely contrary both to facts and the real truth. However, if he honestly confesses that electricity does not do these things, but that all refrigerating processes (ordinarily called 'ice machines') are entirely dependent on a gas-forming chemical, then:

"What chemicals are necessary to actually do the work of making ice or cold air? If frank, he will tell you that ammonia is used in the large commercial plants, and sulphur-dioxide, methyl (not 'menthol') chloride or ethyl chloride in the small household units—such as he recommends for your home!"

If the salesman who calls on me is frank and honestly confesses to the fact that ice machines depend on some sort of a long-named chemical, I am to criticize the name of whatever he is selling as follows: "Why do the makers of these devices, in their glowing advertisements that purport to tell everything, studiously refrain from dwelling on the fact that gas-forming chemicals (not electricity) are 'at the bottom' of them all—or if these chemicals are so much as mentioned they are usually given pretty, fanciful-sounding names. "Iceatona,' "Freeze-all,' etc.—obvious attempts to conceal the true names and nature of what is really used?"

How Does the Iceman Make Ice

It now occurs to me to wonder just how the ice my iceman delivers is made. They don't cut it from Perkins' Pond any more. That pond has been filled in to make building lots. But the booklet doesn't say much about that, except to warn me that many gases are offensive in odor, generally detrimental to health, and likely to be dangerous around the house if there is a leak in a pipe. I am also to inquire whether the electric machine will provide plenty of ice for sicknesses, unexpected guests, impromptu social affairs, and suspicion is cast on those tiny cubes of ice which have always interested me. They may be "murky and frothy." Among the questions I am to hurl at the unfortunate salesman is scattered a sad little notice concerning the deaths of some people in Danbury by gas from some sort of ice machine. I think of an iceman I once knew who was killed as a result of being hit by falling chunks of ice and read on.

By this time it occurs to me that the iceman and their bosses seem to be in sort of a panic about the new competition in their field. The brickbats they throw with bitterness and dexterity begin to arouse my sympathy for ice machines, although I didn't consider them favorably before, mostly because they seemed high in price.

He must be asked, this salesman for an ice machine, why many perishable foods dry up under his system, foods which need the juiciness of ice.

I also want to ask my iceman a bunch of questions about ice, but he ran away.

Up to this point, it seems to me, as a user of ice, the association or ice company which composed this book done about as good a selling job as my negative-minded iceman with his surreptitious back-door method of insinuating the booklet into my possession.

Ice People in a Panic

The whole thing has impressed me as being the work of people in a panic about a new competitor; the reader sees fear and desperation on each page.

Then, suddenly, without any previous warning, this piece of advertising (for it is advertising, Mr. Iceman, even if it does come in via the back-door instead of the front) begins to suggest real, frank and open advertising arguments.

Being neutral, I read them.

Here is the cost argument. It interests me greatly. I am to ask the salesman: "Whether the cost (the entire expense) for keeping your food properly chilled will be greater or less with his device than with ice? Remember, an ice-machine is an all-the-year-'round investment, and that in figuring the entire expense for 'machine refrigeration' you must take into account yearly interest on the original cost of the outfit; then there is the inevitable item of depreciation (wearing out) incident to all mechanical devices (your automobile is a good illustration!). Next, you must reckon with maintenance (keeping the machine running); this includes electricity (often alone more than you pay for ice), chemicals, expensive expert repair services, oil, taxes, insurance, etc. Finally, there's the matter of upkeep—replacing old, worn-out or defective parts. Each and every one of these items must be taken into account if you would know positively what mechanical-chemical refrigeration is to cost you.

"In comparing ice refrigeration with machine refrigeration, be sure to take your ice expense for the entire year, not July and August bills multiplied by six, or July multiplied by twelve—an adroit way of figuring practiced by many machine salesmen!"

That looks to me like good copy material for the advertising on the part of the ice people.

With all due respect to some of the men who have written on the subject in *Printers' Ink*, I am not one of those who believe that the makers of electrical (perhaps I should say "chemical") refrigerators and icemen should lie down together in peace and co-operation. These lion and lamb gambols on the green have never impressed me.

I remember a big conference held last summer in Chicago between representatives of the ice industry and the electrical refrigeration makers, in which they agreed that they both had a common purpose to increase the use of refrigeration among the masses.

Yet here is my iceman, ten months after the friendly conference, handling me this most aggressive booklet.

I believe the ice people are going to find it most difficult to co-operate with their competitors in selling refrigeration, as they discover more and more of their customers turning to the newer method.

The advertising of the ice industry described in this same issue makes me think I am a good prospect.

Public Is Fair Minded

The public is intensely interested in ice machines right now, due to the large-space advertising used by a few leaders. This means that the public is interested in both sides of the whole question of refrigeration. The public is fair-minded. Many people whom I know have certain questions they want answered, particularly about danger, bother and expense, before they install an ice machine. But they don't want to scare a salesman for an ice machine to death by hurling these questions at his defenseless head even if he has "been drilled in one of those schools under the direction of a high-pressure master," as the booklet declares, and even if he does use pride of possession as his chief talking point—"that Mrs. So-and-So, next door, across the way or up the street is considering the purchase of one of these machines, and you certainly want what she has."

The public wants the ice companies to tell in frank, paid space, why the present ice users should stick to ice. It also wants the iceman to sell intelligently. When the booklet, in the last few pages, finally says: "Then ask us," it offers some good subjects for copy. Here are a few of them. These were followed by the "price-comparison chart," printed below:

Ice provides all the refrigeration needed to keep perishable foods fresh and wholesome for fully as long a time as economy and good common sense tell you such foods should be kept.

Ice is a far cheaper method of doing this than any mechanical-chemical substitute and ice, unlike those substitutes, can be summoned to your service when needed or dismissed when it is not.

Ice requires but one kind of service—that given by the iceman when he comes to you daily, every other day, once a week—as often or as seldom as your desires and weather conditions warrant.

Ice, within its crystal-clear depths, can hide no chemical, no form of mechanism—*nothing* that could mean danger or trouble to *you or to your children—the little ones who are quick to explore the refrigerator when free for the moment from mother's watchful care!*

Ice is nature's own cold-maker—a true "self-worker" that can be depended upon, under any and all conditions, and at any and all times to do its duty safely, silently, efficiently and economically.

If the chart printed below, somewhat confusing as it is, is correct in its figures, then there is no need for back-door advertising on the part of my iceman and yours.

Let old-fashioned competitive advertising shed some real light on this question, which is interesting to millions of people. Forget about friendly conferences, followed by polite resolutions that don't last. Make your iceman better salesmen.

That is my advice to the whole refrigeration industry.

It doesn't seem fair to me for the ice people to try to turn a perfectlygood iceman into a back-door advertiser who gets an inferiority complex when he thinks about an ice machine.

The Chart the Iceman Gave Me

Comparison of Cost between Ice and a Mechanical-Chemical Substitute

Mechanical-Chemical Substitute		Ice	
Box and Unit	$400.00	Large Families Using Ice the Year Round	$ 48.83
*Yearly Depreciation, 10%	$ 40.00	A Well-Made, Properly Insulated Refrigerator, $125.00, Allowing 10% Depreciation	12.50
Yearly Interest on Investment, 6%	24.00	A Yearly Interest on Investment at 6%	7.50
Yearly Cost for Electric Current	36.00		
Yearly Allowance for Service and Repairs	15.00		
Total Cost for One Year	$115.00	Total Cost for One Year	$ 68.83
Yearly Saving in Favor of Ice			$ 46.17

*This supposes the machine will last ten years—seven to eight years is nearer the truth.

Fundamental Principles of Refrigeration Explained

A Condensed Review of the Physical Laws Upon Which Are Based the Design and Operation of Electric Refrigeration Equipment

By C. B. Ryan, Jr., Welsbach Company, and
J. F. Hendrickson, Servel Corporation

How does the electric refrigerator produce cold? What goes on inside the machine? How does it work, and why?

The process of refrigeration may be explained in fairly simple terms—sufficient to give the user an *idea* of how it works—enough information to "take the mystery out" of the machine. Even the statement that "the motor pumps the heat out of the box" may satisfy many people.

Anyone who is in the business, however, wants to know more, and *must* know more to act intelligently. In any study of the subject it soon becomes evident that a knowledge of "first principles" is essential to a clear understanding of the operation of the machine.

In this article, the third of a series, the authors give a concise outline of the fundamental physical laws upon which all electric refrigeration machines are based.

All refrigerating processes are governed by identical basic principles. Whether we refrigerate with melting ice or with something colder than ice, we must employ the same fundamental physical laws. This division of natural laws is called "Thermodynamics." "Thermo" means *heat*. "Dynamics means *active energy*. Refrigeration then, is governed by the laws of active heat energy.

A clear conception of electric refrigeration demands an understanding of these basic factors. It would be well to consider these natural laws, therefore, before taking up the practical mechanical aspects of electric refrigeration.

Heat and Cold

Heat is a form of energy.
Cold is absence of heat.

Heat can be produced by the expenditure of other forms of energy. Other forms of energy can be produced by the expenditure of heat.

Energy is the capacity to perform work. It can neither be created nor destroyed. It can, however, be converted from one form into another.

Heat, for instance, is changed into mechanical energy when it is used to drive a steam engine. Mechanical energy can be converted into electrical energy when the steam engine turns a generator. Electrical energy can be converted back into heat, as in a toaster or electric range. It can be used, also, for the forcible *removal* of heat, as in electric refrigeration.

Absence of Heat

Everything in the world contains heat. The temperature at which there is complete absence of heat has never been reached. Scientists assume it is 460 degrees below zero on the Fahrenheit scale—almost 500 degrees colder than freezing water. This complete, but non-existent, absence of heat is called "absolute zero."

Temperature and heat do not mean the same time. Temperature indicates the degree of heat concentration, in simpler words, the amount of heat energy crowded in a given space. *Heat* is energy. *Temperature* is merely the measurement by which the *relative* heat concentration of different substances can be determined.

Heat is fluid. This doesn't mean it is a visible liquid, but it means that heat flows with great ease from one place to another, or from one object to another.

Heat always seeks to establish a constant temperature. Just as water seeks a constant level, so will heat always flow from a warm object to one which is less warm. It can no more flow from a colder to a warmer object, than water can flow up hill. It is bound to seek a constant temperature, and, therefore, is bound to flow from a hot to a cold substance until the temperatures of the two become identical.

When heat flows from a warm to a cooler substance, we say either that the cooler substance absorbs heat from the warmer or that the warmer substance is cooled by the extraction of its heat.

Heat Transfer

There are three ways in which heat can flow. These are called, Radiation, Convection and Conduction.

Radiation means the transfer of heat from one object to another without affecting the medium which separates the two. Radiation is assumed to set up ether vibrations which can affect only such objects as are tuned to receive them. The earth, for instance, is warmed by the sun, but the temperature of the void which separates the two is not affected. Those who have reached high altitudes in airplanes report that the higher they ascend the colder it becomes. They are approaching the outer limits of our atmosphere. If they could enter the void or the ether which separates us from the sun, they would find absolute zero—complete absence of heat. The radiant electric heater is a good example of the fact that some surfaces radiate heat more readily than others, just as some are more capable of receiving it. The radiant heater uses about the same amount of energy and gives about the same amount of heat as an electric flat-iron. The iron, however, warms only the air that is close to it. The radiant heater warms anything which readily absorbs radiant heat energy, but has relatively little effect upon the air through which that radiant energy travels.

Convection means the transfer of heat from one place to another through the medium of some moving body or substance. The heat from a furnace, for instance, travels by convection. It is taken to the room to be heated through the medium of a moving body of air, water or steam.

Conduction means the transfer of heat from one part of a body or substance to some other part of that same body or substance. Heat can also be conducted from one body to another if the two are in actual contact.

Transformation of Energy

The electric toaster is an example of how all three of these methods of heat transfer are utilized. It also demonstrates that energy can be converted from one form into another. The energy in coal is released as heat. Its heat travels by both radiation and convection to a boiler. It is conducted through the boiler tubes to water. Heat then goes by convection through the passage of steam to the engine. This converts the *heat* energy into *mechanical* energy. The mechanical energy of the steam engine drives a generator. The generator converts *mechanical* energy into *electrical* energy. This electrical energy is transmitted through wires to some distant toaster. The toaster reconverts the *electrical* energy back into *heat* energy. This *heat* energy used to cook food, is converted into *chemical energy*. As chemical energy it is taken into the human system to be stored up and again released in various forms.

"Sensible Heat" and "Latent Heat"

Not all heat is measurable with a thermometer or can be detected by the human senses. The heat which we can feel or measure with a thermometer is called "sensible heat." Heat that we cannot feel or measure is called "latent heat."

We know, for instance, that if we heat water to 212 degrees it begins to boil. It must continue to absorb heat if it continues to boil. The temperature of the water, however, will not exceed 212 degrees if it is boiling under no more pressure than that of the air at sea level. All that we can accomplish by increasing the heat is to make the water boil more rapidly. The steam, as it leaves the water, is also 212 degrees. No matter how rapidly we apply heat we cannot make the steam hotter than this without putting it under pressure.

We find this same condition again when we melt ice. At 32 degrees ice will begin to melt. No matter how rapidly we apply heat we cannot make the ice warmer than 32 degrees. The water is also 32 degrees as it melts from the ice.

Water will not boil and ice will not melt ulness they can absorb heat. The heat, however, does not affect their temperatures when they reach the melting point or the boiling point. To all appearances, the heat they absorb just disappears or is destroyed.

But we all know that this cannot be true. Heat is energy. Energy cannot be destroyed. It can change its form, but it cannot cease to exist. Heat, therefore, can never be destroyed. Instead of being snuffed out when absorbed by melting ice or boiling water, it merely changes form.

Change of Physical State

If this thought is followed to a natural conclusion, it seems obvious that the expenditure of energy is essential to a change of physical state. By change of physical state is meant the conversion of a solid to a liquid, or a liquid to a gas or vice versa.

If energy is involved in these changes it seems quite obvious that it must be supplied in the form of heat. It seems equally obvious that although it is apparently inactive, it has not ceased to exist.

To understand what becomes of this heat, and to know how and why a refrigerator refrigerates, we must know something of how scientists explain the existence and behavior of matter. This involves what are known as atomic and molecular theories.

The Molecular Theory

An atom is the very smallest particle into which any substance can be divided. There are about a hundred different kinds of atoms known and recognized by modern science.

A substance which is composed entirely of some *one* of these hundred or more kinds of atoms is called an *element*. Gold is an element. So are iron, copper, lead, oxygen, hydrogen, nitrogen, carbon, chlorine, sulphur, mercury, and about ninety other known substances.

The atoms of two or more elements can combine to form substance which are unlike any of the constituent elements. The smallest particle into which any of *these* substances can be divided and still retain the chemical structure and characteristics of the substance itself is called a *molecule*. Water, for instance, is a combination of two parts hydrogen to one part oxygen.

Molecules and atoms are never at rest. They are in constant motion. This seems hard to believe. Thousands of millions of little molecules leaping, jumping about and dancing around in a tiny bit of the hardest steel—there is a picture that staggers the imagination. But how else explain the existence and behavior of matter? Other theories have been advanced from time to time. All of them make equal or greater demands upon the human imagination, however.

Molecules are not only in constant motion, but they also have a strong attraction for the molecules with which they are combined.

Their attraction is always trying to draw the molecules so tightly together that they can no longer move. Their active energy is always trying to draw them *apart* so they will be more free to move. The poor little molecule has a tough life. He is a veritable battlefield, on which these forces are combating.

We may regard the energy of molecular

(*Continued on Page 6*)

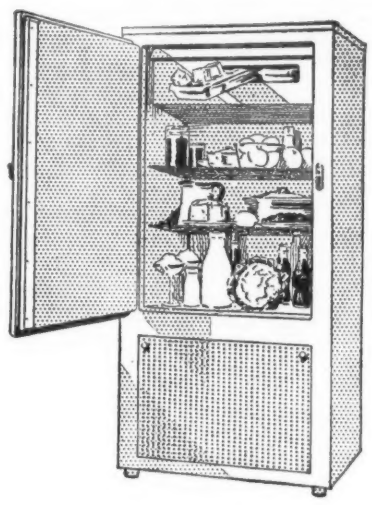
FLINTLOCK CONDENSERS
EFFICIENT—ECONOMICAL—COMPACT

~ For ~
Electric Refrigeration

~ Give ~
Greater Efficiency at Less Cost

If You Don't Use a Flintlock
We Both Lose Money

FLINTLOCK CORPORATION
4461 W. Jefferson Ave. Detroit, U. S. A.



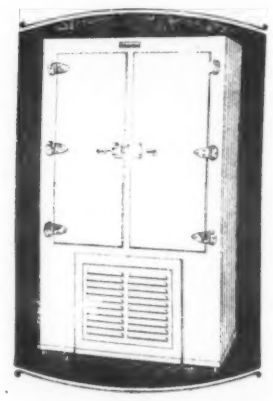
Model 273
$210 INSTALLED

There is Now a Kelvinator to Fit the Needs of Every Modern Home

(1) Kelvinator can be installed in any good refrigerator now in use.

(2) The home maker may select from the complete line of Cabinet Kelvinators one best suited to individual needs. A Cabinet Kelvinator may be purchased for a price as low as $210, installed.

(3) The Kelvinator dealer also has available the complete line of Leonard Refrigerators and the De Luxe Jewett porcelain lined Refrigerators. He will deliver them Kelvinator-equipped.

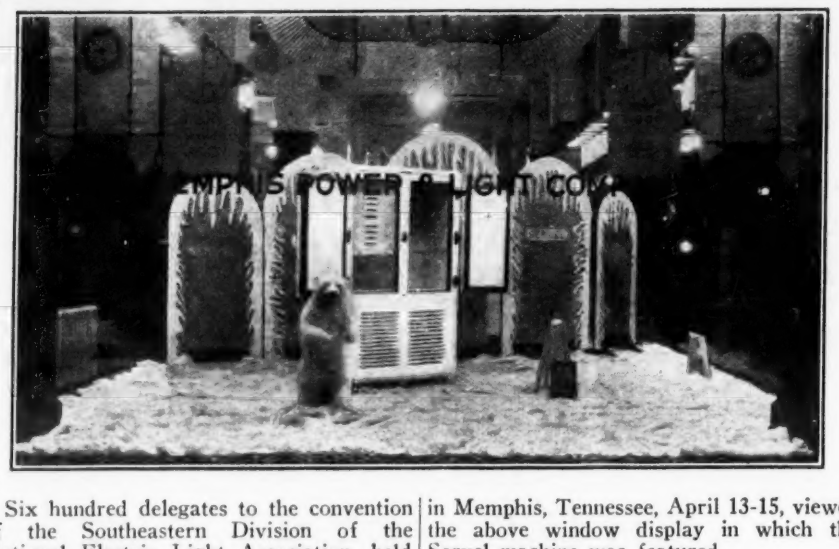


(171)

Kelvinator
The Oldest Domestic Electric Refrigeration

Kelvinator, Detroit, Michigan - *Division of Electric Refrigeration Corporation*
Kelvinator of Canada Ltd., London, Ont.

Window Display of Memphis Power and Light Co.



Six hundred delegates to the convention of the Southeastern Division of the National Electric Light Association, held in Memphis, Tennessee, April 13-15, viewed the above window display in which the Servel machine was featured

ELECTRIC REFRIGERATION PRINCIPLES EXPLAINED

(*Continued from Page 5*)

attraction as a constant force. The energy of molecular motion, however, is subject to change. The weaker this energy of *motion*, the more forcefully the energy of attraction will draw the molecules together The greater the energy of motion, the more forcefully the molecule *resists* the attraction of his neighbors.

When the molecules are so deprived of active energy that their attraction holds them close together the substance is a *solid*. When there is a more equal balance between attraction and resistance, so that they are still held together but less tightly, the substance is a *liquid*. When the energy of motion is great enough to overcome the attraction, the molesules separate and the substance is *gas*.

These changes of state involve no *chemical* change. They are purely physical or mechanical. Ice, water, and steam have identically the same *chemical* make-up. They differ only *physically*. Steam is a gas formed by two parts of hydrogen and one of oxygen. Water has the same chemical structure—two atoms of hydrogen to each one of oxygen. In ice we again find the same atomic companions—two hydrogen and one oxygen.

It might be interesting at this point to learn how scientists define these three physical states.

They say a *solid* tends to retain a given shape and to occupy a given space. *Liquid* tends to occupy a given space and to take the shape of its container. *Gas* takes *any* shape and tends to occup *any* space.

How do molecules of water absorb sufficient energy to fly away from each other as steam? Where does this energy come from? How do the molecules pick it up?

When we turn 32 degrees ice into 32 degrees water or 212 degrees water into 212 degrees steam, we know that a great deal of energy has been utilized and that it must continue to exist somewhere and in some form.

So far as our senses are concerned, this heat has just disappeared, because it has had no effect upon the temperature of the substance which absorbed it. We say that it is stored up as some form of latent or inactive heat.

But dynamic energy cannot lie down and go to sleep. It has to be busy, always. It seems safe to assume, then, that instead of bceoming inactive *heat*, it has become the active energy of molecular motion and is busily helping each little molecule to put up a knockout fight against the attraction of his neighbors.

Recovering Latent Heat

The heat that supplies energy to convert a solid into a liquid is called the "latent heat of fusion."

The heat that converts liquid into a gas is called the "latent heat of vaporization."

If we can turn a solid into a liquid by allowing it to absorb sufficient heat, and if in the same way we can turn a liquid into a gas, the reverse of these processes must also hold true. We must be able, by *extracting* heat, to convert gas into a liquid or a liquid into a solid.

This may be illustrated by taking one of the many gases which will not condense, or become liquid, at normal atmospheric pressure and temperature. Put this gas under heavy pressure. This concentrates its heat. We can remove part of this heat by running the gas through tubes and allowing the heat to be conducted off to the air. By thus reducing the temperature, we deprive the gas of energy, because we take energy away in the form of heat. Deprived of energy, the motion of each molecule slows down. It no longer has sufficient force to resist the attraction of its neighbors. The molecules are drawn closer and more forcibly together. As soon as we have sufficiently deprived it of energy, the gas becomes a liquid. The amount of heat removed can be controlled by increasing the pressure. The heat that we had to *extract* in order to convert the gas into liquid is exactly the same amount of heat that must be absorbed by the liquid before it can again becomes a gas.

The "sensible" heat that becomes latent and appears to be lost when we boil water, is returned to us when we condense or liquefy steam

British Thermal Unit

Obviously, then, there must be some heat measurement other than temperature—a unit to indicate the *amount* of energy as well as the degree of heat concentration. Temperature does not measure the volume or quantity of heat, in the sense of indicating a total amount.

The measurement of heat quantity accepted in English speaking countries is the British Thermal Unit. This is often referred to as the "b. t. u." One British Thermal Unit is the quantity or amount of heat required to raise one pound of water, one Fahrenheit degree.

It takes 144 British Thermal Units to supply enough energy to convert one pound of 32 degree ice into 32 degree water. In other words, you could raise 144 pounds of 32 degree water into 33 degree water with the amount of heat that is required to melt a single pound of ice. This means that it takes 144 times as much heat to melt a pound of ice into 32 degree water as it does to raise that water to 33 degrees.

The "latent heat of fusion" of water, therefore, is 144 British Thermal Units. Consequently, when we reduce water to the freezing point we must extract 144 British Thermal Units from each pound before we can turn it into ice.

Variable Boiling Points

The melting and the boiling points of various substances differ. For each substance, however, the melting and the boiling points remain constant. They can be changed only by applying pressure or creating a partial vacuum. But a given substance will always melt or boil at identically the same temperature if the vacuum or the pressure is constant.

Under pressure of air at sea level, water will always boil at 212 degrees. At the top of Pike's Peak, however, the air is so much lighter and its pressure is so much less that water will always boil at 194 degrees.

The pressure of air at sea level is 14.7 pounds. This, for convenience, is called zero gauge pressure. Actual or absolute zero represents a perfect vacuum. Sea level pressure is also referred to as "normal pressure."

The pressure exerted by any gas will vary in direct proportion to any change in temperature, if the volume is constant.

You have an illustration of this when a bottle only partly filled with liquid has been tightly corked when it is at a low temperature. If this bottle is now placed in a warm room there is every likelihood that the cork will be expelled with a sharp report. The higher temperature has raised the pressure.

Relation of Pressure to Temperature

Suppose we confine a gas in a coil of copper tubing. The tubing is exposed in an open room. One end is closed and the other is sealed with a pressure gauge. Assume 10 pounds pressure in the tube and a room temperature of 70 degrees. The temperature of the room and of the confined gas are naturally the same, because any difference would be equalized by a flow of heat from one to the other, by conduction through the tubing.

The gas will continue to exert a 10 pound pressure just as long as the room remains at 70 degrees. The instant the room temperature is lowered, however, the heat will flow out of the warm gas into the cooler room. This flow of heat deprives the molecules of energy. They can no longer pound against the surface of their container with the same force. Their attraction becomes relatively stronger. They are drawn closer together. The gas shrinks. When the temperature is lowered, therefore, the pressure is bound to decrease. The lower the temperature of the room, the more heat will be extracted from the gas, and the lower will become the gas pressure.

If, on the other hand, we raise the temperature to more than 70 degrees, we will also raise the gas pressure to more than 10 pounds. Heat will flow from the warmer room to the cooler gas. The molecules will become more energetic. The energy of attraction will become relatively weak. The molecules pull away from each other with greater force. They seek greater freedom of movement. The gas tries to expand. The harder it tries the more energy there is in the impact of its molecules against the surface of its container. Consequently, the more energy the gas contains in the form of heat, the more pressure it exerts.

With a given volume of gas confined in a given space, and with a constant temperature, the pressure can never be increased.

If the volume of a given gas remains constant, therefore, its pressure will vary in direct proportion to its absolute temperature.

This is one of the fundamental and first of the natural physical laws which is of basic importance to refrigeration, to the electric industry, to all engineering and industry which applies any of the laws of thermo-dynamics.

Vaporization Temperatures

The boiling point of any liquid can be raised or lowered to any desired temperature merely by supplying sufficient pressure or creating sufficient vacuum. Ordinarily, we use the term "boiling point" to denote the temperature at which a given liquid will undergo a change of physical state when under the pressure of the air at sea level.

The boiling point of water, for instance, is 212 degrees above *zero*.. The boiling point of alcohol is 173 degrees above *zero*. The boiling point of sulphur dioxide is 14 degrees *above zero*. The boiling point of methyl chloride is 11 *degrees* below zero. The boiling point of ammonia is 28 degrees below zero. The boiling point of carbon dioxide is 110.5 degrees *below* zero. The boiling point of Ethyl Chloride is 54.5 degrees above zero.

In electric refrigeration, we take a substance which could exist only as a gas in normal atmospheric temperatures and perssure. We confine this substance in a copper coil. Here it is put under pressure, which raises the temperature, and part of its heat is conducted off into the air. The substance now exists as a liquid.

The liquid is released from this high pressure into a coil which is under less pressure or even under a partial vacuum.

As soon as this compressed liquid is released from pressure it begins to expand. Its heat is now spread through a greater area. Consequently, its temperature drops. It becomes colder than the air by which it is surrounded. Heat will always flow from a warm substance to one which is less warm. Consequently it flows by conduction through the coil from the air to the liquid. The liquid absorbs so much that it boils. It is converted into gas. The heat has supplied the energy for a change of physical state. It becomes latent in the gas. The gas can now be extracted from this low-pressure and low-temperature coil It is again forced into the high pressure coil; some of its heat is removed, and it is again transformed into a liquid so that this process or continuous cycle may be repeated.

Measurement of Refrigeration

Regardless of the refrigerating processes involved, refrigerating capacity is always measured in terms of ice melting.

One ton of refrigeration does not mean the capacity to manufacture one ton of ice. It means the extraction from the refrigerator of the total amount of heat that becomes latent when one ton of ice is converted into 32 degree water.

A ton is 2,000 pounds. One pound of ice will absorb and make latent 144 British Thermal Units. One ton of refrigeration, therefore, is 2,000 times 144—or the capacity to remove each day 288,000 British Thermal Units.

In common practice, "'refrigerating capacity" and "ice melting capacity" are interchangeable terms.

Ice is used as a basis for measuring refrigeration only for convenience and because the need for a unit of measurement was felt before vastly superior methods threatened to supersede ice in domestic usage. The ice-melting basic is not used for the purpose of comparison, because there can be no comparison between ice and electricity or between the benefits derived from their use.

ADVISES STUDY OF PUBLIC UTILITY POLICIES

(*Continued from Page 1, Col. 1*)

oughly schooled by a utility representative in the rates of the utility, the reasons for the rates, the peculiar problems and policies of the utility and the reasons therefor.

I am not without realization that such an arrangement could be beneficial to the utility as well. An independent salesman, without any direct connection with the utility, could be of great assistance in discovering wherein the utility itself were at fault in its policies or methods, or even in some cases its rate structures.

No one recognizes more than I that mechanical refrigeration is here to stay. Not all of the "kinks" have as yet been orked out, but this will be done. Ice manufacturers and distributors will adjust themselves to the new conditions, but we must give them time; this is only just. There is a mutuality of interest between the electrical refrigerator manufacturer and the central station.

The criticism that I would make of the manufacturer is that in too many cases he has failed to realize the necessity of studying in their very broadest sense utility problems and policies, and in insisting that his sales managers and his sales representatives first of all obtain a thorough knowledge from utility sources of its policies and the underlying reasons back of them.

Made to Order

A few years ago the largest Electric Refrigerator Manufacturer called for a proposal on an entirely new kind of porcelain enameling plant—a continuous plant, with work progressing from furnace to furnace by use of special conveyors, driers and forks.

FERRO was given the job. We made good. First, three furnaces were ordered and now fifteen furnaces are successfully operating. With this equipment every lining, part and panel, is completely enameled within three hours from the time it is started through the pickling operation.

Let us explain our proposition to you. We would like an opportunity of quoting on enameling equipment and would be very glad to have you consult with us as to whether or not it would be economical for you to operate your own porcelain enameling department.

Write for "Men and Methods"

THE FERRO ENAMEL SUPPLY COMPANY
Cleveland, Ohio

THERMOSTATS Automatic Controls for Refrigeration and Oil Burners
SHAFT SEALS—FLOATS HIGH PRESSURE CUT-OUTS
LIGHT STAMPINGS
Engineering Department at Your Service
GOODNOW & BLAKE MFG. CO. 3840 BEAVER STREET DETROIT, MICH.

REFRIGERATION STAMPINGS
We Specialize in the Design and Manufacture of
ICE CREAM CABINETS
We make them complete or furnish parts separately
Brine Tanks - Cooling Units
Unit Supporting Bases and Perforated Metal Covers
METAL HOUSEHOLD REFRIGERATORS (*Complete*) OR CAN FURNISH OUTSIDE STEEL PANELS, INSIDE LININGS, LOUVERED PANELS, LEGS, ETC., SEPARATELY
We Have a Competent Engineering Staff to Help You - We Solicit Your Inquiries and Specifications
MOTORS METAL MFG. CO. - DETROIT MICHIGAN

COPE SWIFT CO., Inc.
FOUNDED 1891
REFRIGERATION COOLING FANS *and* DRIVE PULLEYS
We solicit your inquiries and specifications
COPE SWIFT COMPANY, Inc.
247 McDougall Ave. - - DETROIT, MICH.

"WILDER METAL"
Sheets For Electric Refrigeration Construction
Permanence Against Corrosion at a Minimum Expenditure
Obtain Samples
WILDER METAL CO. NILES, OHIO

So near the Ocean it's called
The Breakers
So modern in equipment and well conducted it is known as one of the World's finest Hotels
So
plan a Sojourn by the Sea and visit
The Breakers
ATLANTIC CITY
NEW JERSEY
JOEL HILLMAN *President*
JULIAN HILLMAN *Vice President & Manager*

Holbrook Company Celebrates 25th Anniversary

The H. E. Holbrook Co., of Boston, New England, distributors of the Iroquois electric refrigerators and household appliances, celebrated their 25th anniversary on April 1, 1927. This event was attended by architects and builders, bankers, representatives of public utilities and manufacturers of household appliances, Boston papers and trade publications.

This occasion was made decidedly interesting by the formal opening of their new showrooms at 89 Federal St., where the Holbrook Co. maintains a permanent display of household appliances. Their display is unique in that it consists of a number of model kitchens, each having a different color scheme, attractively laid out and completely fitted up with labor saving devices. In addition they have built in their showrooms several completely furnished apartments consisting of living room, bath, dressing room and kitchenette.

Representatives of the Holbrook Co. escorted their guests through the model kitchens and apartments, where demonstrations were made of the various appliances. After the inspection trip the guests adjourned to the Boston Chamber of Commerce where a dinner was served. V. C. Kylberg, eastern representative of the Iroquois Co., acting as toastmaster.

Founder Reviews Growth of Business

Among the speakers were the following: H. E. Holbrook, president of the H. E. Holbrook Co., after welcoming the guests, reviewed the growth of his organization and mentioned that their business was first begun some 25 years ago in one room in the John Hancock Building, 49 Federal St. The business grew from this one room into ten rooms, and eventually they moved to their present quarters, opposite the Bostom Chamber of Commerce, where they now have some 10,000 square feet.

They began with screens and within a short time added weatherstrips. Then followed disappearing beds, folding partitions, steel shutters, shades, dish-washers, bathroom cabinets, and finally electric refrigerators. It is quite probable that in the near future the Holbrook Co. will materially increase both their organization and activities by establishing their own branches in the principal New England cities.

Maintains Staff of 100 People

Mr. Holbrook began with a partnership. Now he has an organization of which he is president and treasurer; E. L. Powell, vice-president, and A. W. Spencer, secretary, together with a staff of nearly 100 people, consisting of salesmen, service and installation men for the various lines.

E. A. Stevens, vice-president of the Atlantic National Bank, paid a very glowing tribute to Mr. Holbrook, emphasizing his financial responsibility and integrity. Probably much of the Holbrook success, he said, has been due to their ability to keep expenses down and mark their merchandise knowingly so that the public will buy them. Before buying any merchandise the Holbrook Co. has always had the money available in the bank when the account fell due.

Greenwood Outlines Boston Edison Policy of Co-operation

E. S. Greenwood, manager of the Appliance Department of the Edison Illuminating Co., of Boston, gave a very interesting resume of his company's policy in furthering the use of household appliances in the home and expressed their desire to co-operate in working with both the distributors and dealers in the furtherance of their common interests. Mr. Greenwood called attention to the large capital investment which the public utility company has in generating equipment, transmision lines, etc., in order to properly provide electricity and service for the consumer.

Stone & Webster Official Recounts Growth of Appliance Use

N. T. Wilcox, of the Stone & Webster organization, reviewed some of the handicaps encountered in first introducing electrical household appliances, and spoke at some length on the influence which the servant problem had on the rapid substitution of electrical appliances for manual drudgery in the home. He predicted a tremendous growth in the use of household appliances during the immediate future.

A. H. Bell, production manager of the Iroquois Electric Refrigeration Co., which is an associate of Barber Asphalt Co, spoke on the resources of that organization and outlined the extent to which they had gone in perfecting the Iroquois. Mr. Bell mentioned that they were most desirous of co-operating with the utility companies and others concerned in the production of a refrigerating unit which would more than comply with the local requirements and at the same time give efficient and dependable service to the consumer.

H. K. Murdock, vice-president of the Electric Finance Corporation, outlined the function of the Finance Corporation in co-operating with the dealers in the sale of household appliances. Mr. Murdock cited several examples of successful chain store systems now in operation in the elecrical appliance field, and that from his observation indications were that the growth and success of the appliance business would depend largely upon the formation of efficient distribution and retail selling organizations.

W. E. Brigham, past president of the Gridiron Club of Washington, D. C., and editorial writer of national prominence on political questions on the editorial staff of the *Boston Transcript*, spoke at some length the Boston Transcript, spoke at some length on the question of doing business with politically dominated public institutions. Mr. Brigham emphasized the necessity for the business man of today taking an active interest in the political affairs of his own locality in order to bring about a more harmonious relation and better understanding between business and the government—be it either municipal, state or national.

KELVINATOR-LATHROP SALES CONVENTION

Hartford Distributor Organizes Three Sales Divisions

Kelvinator - Lathrop Company, Inc., Hartford, Conn., Kelvinator distributors in six of the eight counties in the state, was host at a recent convention attended by officials from the home plant at Detroit and representatives from Buffalo and Grand Rapids, and some 50 salesmen and service men.

Kelvinator-Lathrop is an outstanding illustration of the rapid expansion of the electric refrigerating industry. Incorporated February 1, the company has since enjoyed a business growth that is great credit to the organization. Previously the company had carried on business on the second and third floors of the building at 436 Asylum street, under the name of the Lathrop Refrigeration Company. Since February the first floor has been taken over for a modernly equipped showroom. Kelvinator electric refrigeration units, also Jewett and Leonard refrigerators are displayed.

Frederick L. Jeffers, secretary and general manager, described the working organization. He said the concern maintains a local sales force and service department. The sales division is divided into three major groups, as follows: (1) home sales and installations; (2) commercial sales and installations, including grocery stores, meat markets and similar retail establishments; (3) apartment house, hotel and office building sales and installations. Mr. Jeffers brought out that the populatrity of electric refrigeration in Hartford is on the upward trend. After the business meeting the gathering enjoyed a banquet at the Hartford Club.

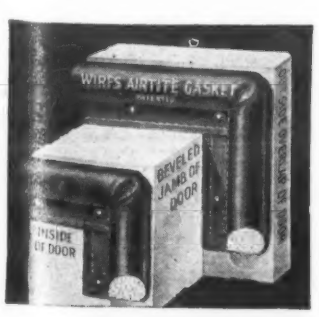
American Radiator Official Elected to G. E. Board

At the meeting of the board of directors of the General Electric Company, April 29, at Bloomfield, N. J., where the board met following the practice of inspecting from time to time the different plants of the company, Clarence M. Woolley, chairman of the board of the American Radiator Company, was elected a member of the board of directors.

Charles W. Appleton, of the law department, was elected a vice-president in charge of general relations with public utilities.

Connecticut Refrigerating Company Incorporated

The Connecticut Refrigerating Company, New Haven, Conn., has incorporated with a capital of $50,000 to manufacture refrigerating machines. The company starts its new organization with a paid in capital of $20,000, and lists the following incorporators: Walter Johnson, Hamden; George J. Fouser and Nathan Winnick, both of New Haven.



Wirfs Gasket
assures
Electrical Refrigeration Efficiency

An electrical unit can only be as efficient as the box in which it is installed. Poor door contacts on wood or metal boxes mean that any unit will have to operate a greater number of hours to maintain an efficient refrigeration temperature. This means added operating cost.

Wirfs PATENTED "AIRTITE" *Gasket*

Keeps the cold air in and the warm air out and maintains the proper zone of refrigeration with fewer operating hours. Wide awake dealers have found that it usually clinches the sale. Most manufacturers supply boxes equipped with Wirfs; write us for their names and a sample.

E. J. WIRFS ORGANIZATION, Inc., 135 S. 17th St., St. Louis, Mo.

Electric Refrigeration
Pumps and Float Controls

WE specialize in building pumps for household refrigeration, ice cream cabinets, display cases, clubs and anything up to two tons capacity. We also manufacture a float control evaporator. Our engineering service is at your disposal to help you with your units. Our factory is in a position to manufacture any parts of your equipment in quantity. Bids cheerfully given upon receipt of blue prints.

Write for Details

DUNNING PUMP & MFG. CO.
326 WALNUT STREET PHILADELPHIA, PA

TRADE
EXTRA DRY ESOTOO
MARK
THE PUREST
SULPHUR DIOXIDE
Analysis Guaranteed
We have an agent, with our product in stock, near you
Wire us where we can serve you
VIRGINIA SMELTING CO., WEST NORFOLK, VA.
F. A. EUSTIS, *Secretary* 131 STATE ST., BOSTON 2 RECTOR ST., NEW YORK

We Test Refrigerators and Ice Boxes

Electrical Testing Laboratories
80th St. and East End Avenue New York City

BRINE TANKS · HOUSEHOLD AND COMMERCIAL SIZES
SPECIAL SIZES AND EXPERIMENTAL TANKS
Equipped to Give Immediate Service for Anything in Sheet Metal
E. W. KREIDER COMPANY - Halfway, Michigan

ELECTRO-KOLD
The Simplest Electric Refrigerator
HOME OFFICE AND FACTORY
SPOKANE, WASHINGTON

SPECIAL CLUB SUBSCRIPTION OFFER

For a limited time, ELECTRIC REFRIGERATION NEWS is being offered at a special club rate where ten or more subscriptions are sent in at one time. The club rate is only 75 cents per year for each subscription (10 for $7.50). Papers will be sent to one address or mailed individually as desired.

SPARE BEDROOMS AND ELECTRIC REFRIGERATION

By O. C. Dunbar, Service Mgr., Globe Electric Supply Co., Denver, Colo.

One would not think of building a home without providing for spare bedrooms. Yet that is just what is being done in a great many commercial installations of refrigeration plants.

This is especially so out in the territory where dealers do not have enough business to afford a sales engineer. The writer has come in contact with many installations where the refrigeration plant was too small, or just large enough to carry the load.

This spring has seen the change of some of these jobs to larger machines, and in most cases the change has been to a different make. This is not the fault of the machine. The purchaser may have been sold on the make of machine, but lost faith in the dealer because he sold the job too small, so decided to try another make.

The purchaser of a refrigeration plant must depend on the recommendation of the firm he is dealing with. That firm or their representative should know the proper size of equipment to take care of his particular need, and by explaining why he should have this size, it should be easy to convince him of the advantage of ample refrigeration.

Every purchaser of commercial refrigeration is a progressive business man. He has hopes of his business increasing from year to year; he may later want to add a case or display counter, so sell him ample capacity. It means larger volume of business, therefore, more profit and a satisfied user.

APPROVES "CAUSES OF FOOD SPOILAGE"

"In the April 13 issue of ELECTRIC REFRIGERATION NEWS there is an article by Mr. Ryan and Mr. Hendrickson on the subject of "Causes of Food Spoilage" which covers in a splendid manner the requirements for the adequate protection of food.

"It is a very interesting subject to the writer who has spent considerable time during the period of thirty years upon these various subjects. I wish that the article could be printed and distributed amongst public service corporations, general utilities and trade journals.

"It is perhaps not recognized by the general public but the fact of the matter is that we are all philanthropists and are filled with altruism in our present field of electric refrigeration. We are working for the health, happiness and the economy in the use of food for the American people. Surely that is altruism."—A. L. Canfield, Manager, Belding-Hall Company, Commercial Department.

15 MACHINES IN NEW DETROIT HOTEL

The application of electric refrigeration was given proper attention in designing the new Detroit-Leland Hotel recently opened in Detroit. Fifteen refrigerating machines are used in this modern twenty story structure.

One refrigerating unit is for the purpose of cooling the air in summer for the lobby, dining and ballrooms. In the commissary there is one for meats, another for fish, a third for vegetables, a fourth for fruits, and two for general use. In the main kitchens individual units have been provided for ice cream, pastries and for the supplies of meat and fish which must be kept at convenient reach for immediate use.

ICE INDUSTRIES START ADVERTISING CAMPAIGN

(Continued from Page 1, Col. 5)

must be done indirectly, but it can be done none the less effectively. With facts in your hands you do not have to slur the other fellow. You can cite them with perfect dignity and conviction."

The first advertisement in behalf of ice made no reference, veiled or otherwise, to ice machines. It talked entirely about the need of food protection during summer months, pointing out that a "nickel's worth of ice saves a dollar's worth of food." For the most part it was aimed at people who put off buying ice until the extreme heat of summer sets in, saying: "A good housewife takes ice regularly, spring and fall as well as summer. That keeps her food in prime condition. In April and May, evenings may be cool, but many days are warm and even hot. Such changes are bad for food. In a good refrigerator, ice will keep a safe, even temperature." Further along in the copy the ice industries explained why and how ice purifies food and ventilates it in addition to keeping it cold.

Notwithstanding the competition of ice machine manufacturers the sale of ice boxes increased about 30 per cent in 1926 There are statistics, too, that indicate a rising per capita consumption of ice, so the ice industries feel that theirs is far from a lost cause. Where they were ignorant of competition a few years ago and, accordingly, unwilling to make a vigorous drive to bring new selling methods into their business, they are now alert and fighting.

The iceman is convinced he has a lot more to sell his present customers than they have been buying in the past, plus a lot to sell new customers who have not bought anything from him up to this time. The plain fact of the matter is that he is thinking harder about cracking those particular problems than he is about mechanical refrigeration as a menace to his business. That, in a word, is why he is not planning to fight with a $200,00 advertising appropriation the ice machine group with some $10,000,000 ready to spend. His $200,000 won't be spent in building up a defense for ice. Ice won't admit it is on the defensive! The $200,000 is going to be spent to educate the millions of people who are not prospects for ice machines but who can and should buy more ice.

G. H. Howell Joins Export Advertising Company

Announcement has just been made that George H. Howell, formerly advertising manager and export manager of the Kelvinator Corporation, and recently business manager of ELECTRIC REFRIGERATION NEWS, has been appointed an associate of the Gotham Advertising Company, export advertising and merchandising, New York City, and will be in charge of the Detroit offices. Offices are located at 504 Free Press Building.

Rollins Now Designing Gas Pumping Stations

L. E. Rollins, consulting engineer, has severed his connection with Ward Electric Refrigerator Corporation, and is now engaged in designing two high pressure gas pumping stations.

St. Louis Apartment to Use 100 Iroquois Units

The Iroquois Company of Missouri, newly organized distributor in the St. Louis territory, reports their first sale of 100 apartment house units.

NEW BOOKLETS AND LEAFLETS

Superior Sheet Steel

The Superior Sheet Steel Co., Canton, Ohio, sends a new two-color broadside entitled "Improving the Cabinet by Improving the Material." This literature contains information relative to the Super-Metal and Galvannealed metal sheets made by this company for refrigerator and ice cream cabinet manufacturers.

Flintlock

The Flintlock Corporation, 4461 West Jefferson Ave., Detroit, Mich., has issued an eight page leaflet illustrating the application of Flintlock condensers and listing the specifications and standard sizes.

Bohn

The Bohn Refrigerator Company, St. Paul, Minn., has recently issued Catalogue No. 27, containing 38 pages of illustrations of the Bohn refrigerator models. The catalogue is very complete in picturing each model and giving its specifications and dimensions.

The same company has issued a 12-page booklet describing their Bohn syphon refrigerators (all porcelain) made expressly for the electric refrigeration industry.

Wilder Metal

The Wilder Metal Company has issued a small leaflet entitled "High Rust Resistance—Low Cost," giving the uses of Wilder Metal Sheets in electric refrigeration.

Universal Cooler

The Universal Cooler Corporation, 18th & Howard Sts., Detroit, Mich., has recently issued an attractive and complete sales portfolio, letter size, leatherette cover, with each loose-leaf page linen-backed. The portfolio contains 30 pages.

Cooke

The Cooke Electric Refrigeration Co., 14-30 North Green Street, Chicago, Ill., has issued an attractive 20-page, four-color booklet, entitled "Cooke (Ammonia) Refrigerating Machines for Domestic Use." A booklet illustrating and describing the Cooke Seal Ring has also been recently issued.

Superior

The Superior Iceless Refrigerator, Inc., Hanna Bldg., Cleveland, O., offers the folder, "Backed by 18 Years' Experience," showing the design and construction of different Superior models.

Sorco

The Gas Refrigeration Corp., 18 East 41st, New York City, sends copies of a circular letterhead used to describe and illustrate "Sorco" gas refrigeration. The letterhead is in the form of a four-page leaflet.

Iroquois

The Iroquois Refrigeration Co., 16th and Arch Sts., Philadelphia, Pa., has recently issued a four-color leaflet, entitled "You Owe It To Yourself"

Jack Frost

The Jack Frost Ice Machine Co., Toronto, Canada, sends the following direct advertising literature:

"Jack Frost Reputation" broadside, showing Canadian apartment house installations.

"The New Jack Frost," two-color folder

"Temperature Controlled Cold Storage for Every Purpose," two-color, 16-page booklet, showing the construction and uses of Jack Frost electric refrigeration. Well illustrated.

Lighting Data

Edison Lamp Works of the General Electric Co., Harrison, N. J., has issued bulletin LD 155, consisting of 56 pages, in which are defined and illustrated "illumination terms."

Biographical Sketches of General Electric Directors

The General Electric Company, Schenectady, New York, has issued a very interesting booklet containing pictures and brief biographical sketches of the members of the Board of Directors of the company It has been mailed to all stockholders along with dividend checks for the first quarter of 1927.

Inquiry from China

Tsu-yin Chang, Electric Business Department; Pataohao Mine, Heishanhsien, Mukden, China, is desirous of obtaining information regarding electric refrigeration equipment, including form and size, inside arrangement, cost of different parts and whole sets, transportation fee, duty charge and other expenses, also terms. The inquiry, which was directed to the Society for Electrical Development, has been referred to ELECTRIC REFRIGERATION NEWS, and manufacturers interested are invited to address communications directly to Mr. Chang.

A Wealth of Information

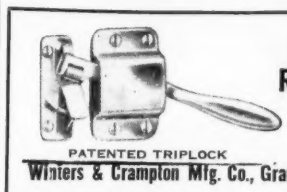
"I have read the last few copies of your very wonderful little paper, and I assure you that it has given me a wealth of information. I am sure this fast growing industry needs such a paper, that will publish unbiased facts pertaining to the industry.—B. Frank Wilson, Kelvinator-Leonard Corp., Youngstown, Ohio.

Four Chicago Ice Firms Merge

Consolidation of four of the principal independent ice companies of Chicago into a new company having assets of more than $6 000,000 has been announced. The new company will be known as Lincoln-Boyle Ice Co., will acquire Lincoln Ice Co., Boyle Ice Co., Irving Park Ice Co., and Ravenswood Ice Co.

A Business Opportunity

A practical engineer with 16 years' experience in the refrigeration field is resigning an active connection to manufacture a line of accessories essential to the refrigeration industry. He invites capital up to $20,000 in return for a share in the business and active participation by the investor if he desires. Address Box 34.



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Note: Replies to advertisements with "box numbers" should be addressed to Electric Refrigeration News, 409 E. Jefferson Avenue, Detroit, Michigan.

Advertising rates for this column only: Positions wanted 40 cents per line for one insertion, $1.00 per line for three insertions. All other classifications, 50 cents per line for one insertion, $1.25 per line for three insertions.

POSITIONS WANTED

Sales executive, fifteen years' experience, now branch manager in Middle West city. Selling electric refrigeration. Exceptional sales credentials and record. Desires permanent position with financially sound organization. Address Box 32.

Five years' experience in household electrical refrigeration. Open for position as production manager or will take charge of production planning—time study and general plant efficiency management. Open for immediate connection. Box 33.

Experienced tool engineer and draftsman seeks connection with reliable electric refrigeration manufacturer. Two years' experience with well known electric refrigeration manufacturer as chief draftsman and tool engineer. Will also consider position as designer and service man. Box 35.

Graduate Engineer, three years' experience in developing electric refrigeration. Have designed satisfactory soda fountains, ice cream cabinets and special appliances. Have tested many of the well known makes of both gas and electric machines. Now head of commercial refrigeration department in large eastern public utility. Good sales and service record. Desire permanent position with good organization in middle west. Box 30.

Graduate Electrical and Mechanical Engineer, with fifteen years experience in refrigeration industry, desires to make a change. Applicant well qualified in household reefrigeration with successful experience record in four phases of the industry: Designing, Selling, Installing, and Managing Service Department. Present employer advised. Address Box 29.

Every Item Interesting

"The paper interests us very much. I don't think there is an item in the paper that I haven't read."—Albert Penn, Penn Electric Machine Co., Des Moines, Ia.

GLOEKLER PITTSBURGH — PA — ESTABLISHED 1856

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3″ cork board insulation—rubber gasketed doors. This construction makes good results certain even when the refrigerator is installed in a hot kitchen. 3 lights of glass in each door. Selected kiln dried oak, golden color, high gloss varnish finish. Heavy cast brass strap hinges and self closing fastener. 7′ 6″ wide; 2′ 8″ deep; 6′ 8″ high. Gross cubic contents of interior 70′. Surface measure 175.5 square feet. Ice door opening 22½″ x 34″ in the clear. Size of ice chamber 27″ wide x 22½″ deep x 40″ high. This large chamber permits of over-coiling which increases ice cube capacity for table service. This refrigerator is suitable for small hotels, clubs, restaurants, cafeterias, etc. Price f.o.b. factory, each (style 49127 RN) $390.00.

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